BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program.	Rulemaking R-06-05-027

JOINT COMMENTS OF THE GREEN POWER INSTITUTE, THE CALIFORNIA BIOMASS ENERGY ALLIANCE, AND THE CALIFORNIA FORESTRY ASSOCIATION ON THE BIOMASS ISSUES IN ATTACHMENT A OF THE SCOPING MEMO AND RULING OF ASSIGNED COMMISSIONER

October 13, 2006

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Introduction

Pursuant to the August 21, 2006, *Scoping Memo and Ruling of Assigned Commissioner*, as modified by the September 14, 2006, *Administrative Law Judge's Ruling on Filing of Draft 2007RPS Procurement Plans and Revised Schedule*, the Green Power Institute (GPI), the California Biomass Energy Alliance (CBEA), and the California Forestry Association (CFA) hereby submits these *Joint Comments of the Green Power Institute, the California Biomass Energy Alliance, and the California Forestry Association on the Biomass Issues in Attachment A of the Scoping Memo and Ruling of Assigned Commissioner*, in Proceeding R-06-05-027, **Order Instituting Rulemaking to Continue Implementation and Administration of California Renewables Portfolio Standard Program**. These *Joint Comments* address issue no. 5 in Attachment A, biomass.

5. Biomass

Biomass issues have received a great deal of prominence in California during the past year, culminating in the issuance of Executive Order S-06-06 from the Governor's Office on April 25, 2006, followed-up by publication of the *Bioenergy Action Plan for California* (CEC-600-2006-010) in July, 2006, by the Bioenergy Interagency Working Group (BIWG), of which the Public Utilities Commission is a member. As a member of the BIWG, the Commission has committed itself to meeting the applicable goals and targets that are set out in the Executive Order on biomass, in particular, to maintaining the position that bioenergy currently has within the state's overall RPS portfolio, which is approximately twenty percent of total qualifying renewables statewide. This is a challenging goal. Achieving it will require a serious effort on the part of the Commission and the LSEs, and in order for a biomass policy to work, sufficient resources will have to be made available to support whatever policies are enacted.

Biomass and biogas resources together account for more than twenty percent of the current renewables procurement portfolio claimed by the three large IOUs. However, most of the new renewable energy development that has been stimulated in California by the state's RPS program is in non-bioenergy renewables, with the result that if current market trends continue, biopower likely will fall below 15 percent of total renewables, even as renewables overall achieve the 20 percent RPS program goal.

The Fundamental Dilemma

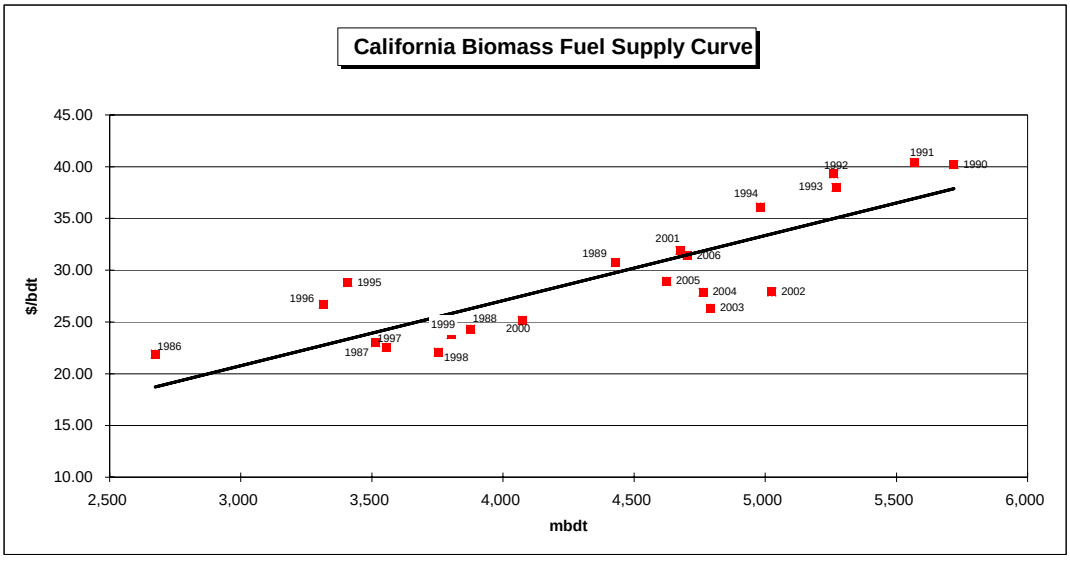
Biopower development faces a well-known dilemma. On the one hand, biomass and biogas resources tend to be at the high end of the cost range for renewable generating sources that qualify for the California RPS program. On the other hand, energy production from biomass and biogas resources provides valuable waste-disposal and environmental benefits that other kinds of renewables simply do not produce. These waste-disposal benefits, for which the biomass and biogas energy producers are not compensated in the commercial marketplace, can only be provided at what economists would describe as the socially optimal level if targeted and effective public policy measures are adopted.

In other words, the fundamental dilemma challenging the maintenance and expansion of biopower production in California is that while it is expensive in terms of cents-per-kWh to produce energy from biomass, failing to produce energy from readily available biomass and biogas resources is also very costly, in terms of lost environmental services, public health benefits, and rural economic-development opportunities. Securing these non-market benefits, or public goods, for California provides the essential rationale for adopting a strong, targeted biomass policy for the state.

Individuals rarely, if ever, pay directly for public goods. Government actions are required, the result of which, when public policies are effective, is that the broad class of public beneficiaries pays for the cost of the public good. We note here that there are more electric ratepayers is California than there are taxpayers. And since the primary, and currently the only, revenue stream available to biomass electricity generators derives

from their sale of electricity, electric ratepayers are a logical class of beneficiaries for the public goods and services they provide.

California has plentiful biomass resources, but expanding biomass energy production from current levels will take an already high cost-of-production renewable to even higher heights. Due to basic supply and demand factors, the existing infrastructure of biogas and biomass power generators in the state has already locked up the best landfill sites and the most accessible supplies of solid-fuel biomass. Expansion of biopower production will require smaller and more remote landfills to be equipped with energy generators, and new supplies of solid biomass fuels that will come from higher-cost sources such as forest thinnings and agricultural prunnings. The figure below shows the historical supply-demand relationship for biomass fuels in California. Current statewide annual biomass fuel use is about 4.75 million bdt per year, with an average price of approximately $32 per bdt (~ 3 ¢ / kWh). If biomass power production in the state were to increase by forty percent, the average price of fuel could increase to more than $40 per bdt, increasing the cost of producing energy from biomass by one cent-per-kWh from today's levels. This unpleasant market effect must be taken into account if an effective biomass policy is to be developed.



from GPI, *California Biomass Database Update 2006*, in press.

Easy Steps are NOT Enough

Executive Order S-06-06 directs the CPUC to develop policies and mechanisms to ensure that biomass and biogas resources together provide at least twenty percent of the RPS procurement portfolios of jurisdictional LSEs, as they increase their overall renewables procurement to 20 percent of retail sales by 2010, and 33 percent by 2020. In 2005 the three large IOUs collectively procured 13.7 percent of their energy from renewable resources,[1] and biomass and biogas together accounted for 21.7 percent of the qualifying renewable energy supply. In order for biomass and biogas to contribute twenty percent of renewables when renewables reach the 2010 target of twenty percent of retail sales, biomass and biogas energy contributions will have to increase by more than 35 percent from their current aggregate level of production. This is a substantial challenge, and achieving it will require substantial measures.

Attachment A of the August 21, 2006, *Scoping Memo and Ruling* concludes its discussion of biomass issues by proposing the following potential solution to the challenge that the Governor's Executive Order has posed:

> Regarding evaluation of the unique benefits of biopower, one approach may be for the Commission to order the inclusion of this factor within the list of evaluation criteria in the RPS Procurement Plans, just as LSEs must include environmental stewardship and water use as part of that consideration. (D.06-05-039, pp. 52-53.) Each bidder would then be encouraged to address any unique biopower benefits of the offered project relative to meeting resource adequacy, RPS requirements and global climate change reduction targets. LSEs would be required to consider this as a qualitative factor in their bid evaluation. Parties should comment on this approach, and may recommend other approaches.

While we certainly agree that biopower project bidders should be given credit for their waste-disposal benefits, forest wildfire risk reduction, cleaner air, and other benefits in the least-cost / best-fit (lcbf) bid ranking process, we must state emphatically that in the opinion of the GPI, CBEA, and CFA, simply providing a bid adder for biomass and biogas in the lcbf process will not come close to achieving the objectives of the Executive Order. In fact, if providing lcbf adders is the only policy that the Commission

[1] In fact, only about 13.0 percent of the utilities' total 2005 supply mix was renewables, due to the utilities' needs to cover line losses and reserves, which are not taken into account in the calculation of the LSEs' renewable procurement percentages.

enacts on behalf of biopower, then it is highly unlikely that biopower energy production will grow at all in California over the next several years, and not at all unlikely that it will drop in real, as well as percentage, terms. An unfortunate result of the lack of consideration of the non-electric benefits of biomass power in today's marketplace is that California's biomass generation has declined from a high of over 750 MW in the early-1990s, to about 550 MW today. There have been ten biomass plant closings in California during the past six years, representing a loss of almost 120 MW of renewable generating capacity.

The Case for a Biomass Policy

The scientific and policy literatures are replete with analyses of the costs and benefits of energy production from biomass resources. In 2000 the GPI authored a report for NREL titled: *Biomass Energy Production in California: the Case for a Biomass Policy Initiative*,[2] that lays out in detail the rationale for why the state should develop a comprehensive biomass energy policy. The GPI's research on the costs and benefits of biomass energy production, as well as a series of policy initiatives pursued by the CBEA during the 1990s, led a variety of public agencies to pursue several major biomass initiatives during the 2000s, including the California Biomass Collaborative[3] and the BIWG[4] in California, and the Biomass Task Force[5] of the Western Governors' Association's Clean and Diversified Energy Initiative (Gov. Schwarzenegger, co-chair), which culminated with Governor Schwarzenegger's Executive Order on Biomass and the BIWG's *Bioenergy Action Plan for California*. We are attaching the four studies referenced in this paragraph to these *Comments,* in order to place them into the record of this proceeding. These studies form the bulwark of the case for a biomass policy for California.

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[2] Morris, G., *Biomass Energy Production in California: The Case for a Biomass Policy Initiative*, NREL Report No. NREL/SR-570-28805, November 2000.
[3] California Biomass Collaborative, *Biomass in California: Challenges, Opportunities, and Potentials for Sustainable Management and Development*, PIER report no. CEC 500-01-016, June, 2005.
[4] Navigant Consulting, *Recommendations for a Bioenergy Plan for California*, prepared for BIWG, Report no. CEC-600-2006-004-F, April 2006.
[5] *Biomass Task Force Report*, Western Governors' Association Clean and Diversified Energy Initiative, January 2006.

The case for public policy measures on behalf of biomass is highly complex. We will not try to present it in its entirety in these *Comments*. Our understanding is that this set of *Comments* is intended to provide a preliminary consideration of the Commission's assigned biomass issues, and how they will be addressed over the course of the proceeding. In brief, energy production from biomass and biogas resources provides a disposal pathway for these resources that is superior to the conventional alternatives, such as landfill burial, open burning, and deteriorating forests across the state.[6] In addition to providing a superior disposal alternative, energy production from these resources also contributes to real and significant reductions in the greenhouse gas emissions associated with their conventional disposal fate.

The 2000 GPI report determined that the value of just the easily quantifiable non-market benefits of biomass energy production is greater than 11 ¢ / kWh, much greater than the value of the power that currently is the only source of revenue for the enterprise. The goal of a state biomass policy is to ensure that biomass and biogas generators can compete in the marketplace, despite the fact that their cost of electricity production is typically higher than the cost of electricity production from other renewable generators, and thereby be able to deliver their valuable ancillary services to the people of California.

The biopower industries in California developed during the late 1980s and early 1990s largely as a result of a confluence of the availability of strong state and federal programs, and the California interim standard offer no. 4 power purchase agreements. By the middle of the 1990s, biomass generators, approaching the end of their fixed-price energy periods (known ominously as the "cliff"), began to sound the alarm, and seek public policy support to allow them to continue to operate. The table below presents a timeline of the evolution of biomass as a public policy issue in California over the past decade. It is interesting to note that the state's current RPS program actually grew out of an effort that was spearheaded by the then nascent CBEA (AB 1202) to create a biomass set-aside.

[6] A combination of poor historical forestry practices in the state, combined with vigorous firefighting efforts over many decades has led to a significant buildup of overgrowth in the state's forests. Compared to healthy forests, overgrown forests are prone to pest and disease outbreaks, and much more devastating wildfires. Biomass energy production facilitates forest thinning and other beneficial forestry practices.

Brief History of Biomass Policy in California

1994	PUC President Shumway endorses a biomass set-aside Resources Agency determines value of externalities @ 4.68 ¢ / kWh CEC asks legislature to "maintain the social benefits of biomass," and "include air-quality externalities in their payments to QFs"
1995	AB 1202 (Woods), which was not enacted, established the concept of a renewables set-aside, including a biomass set-aside of 1.5 % IEP offers competition-based "assured market" proposal for renewables to the PUC
1996	Deregulation progressing at PUC, includes renewables set-asides Legislature trumps PUC, passes AB 1890, **no** renewables set-asides
1998	Deregulation begins
2000	Deregulation fails
2002	Legislature passes RPS program, SB1078 and SB 1038

Threshold Issue

Executive Order S-06-06 directs the Commission: "to initiate a new proceeding or build upon an existing proceeding to encourage sustainable use of biomass and other renewable resources by the state's investor-owned utilities." The joint parties urge the Commission to consider pursuing the first option mentioned in the quote above, "to initiate a new proceeding," rather than addressing the issues brought up in the Executive Order in the existing RPS proceeding, R.06-05-027. We favor a new proceeding for this issue because we believe that the issues involved are sufficiently important and complex that they deserve the prominence and attention that a separate and specific proceeding can provide. Should the Commission decline to open a separate proceeding, then we respectfully request a new *Scoping Memo* be issued in R.06-05-027 that is focused solely on implementing S-06-06.

Achieving the objectives in the Executive Order will require strong measures, and strong measures can only be justified on the basis of a strong and convincing case. GPI Director Dr. Gregg Morris has been performing research and analysis on biopower production in California for more than 25 years, the last decade with the GPI. We believe that a comprehensive and convincing case can be made within the context of the Commission's process to support the adoption of strong measures for biomass, assuming that the Commission provides a full opportunity to the parties to make and argue the case. In our opinion, resolving the issues involved in implementing the Governor's Executive Order on biomass will require testimony and hearings, as well as briefs, comments, and possibly workshops. A six-to-nine month schedule would probably be reasonable.

Answers to Questions in Attachment A

> 5.1 How to efficiently, effectively and optimally reach these 20% biomass targets in a manner consistent with the otherwise resource neutral approach taken in Pub. Util. Code § 399.11 et seq. and the RPS Program

There are two different issues embodied in question 5.1. The first issue is how to reach the 20 percent biomass targets. The second issue is how to do so in a manner consistent with the "otherwise resource neutral approach" taken in the RPS program. The first issue will be difficult enough to achieve, and should be the ongoing subject of inquiry in the biomass phase of this proceeding, or a new biomass proceeding. The second issue is in the category of what we consider to be a *red herring*, a distraction that is not really relevant to the core issue.

The GPI has argued previously in both this proceeding,[7] and its predecessor (R.04-04-026),[8] that while some parts of the RPS program are based on resource neutrality, other parts are based on targeting support at particular resources or technologies (e.g., nearly $3 billion for the CSI; an originally three-tiered support-payment structure for existing resources in the CEC's renewables program), which is entirely consistent with not only Pub. Util. Code § 399.11 et seq., but also Pub. Util. Code § 383 et seq., and § 389.

[7] GPI *Comments on the Proposed Decision of ALJ Mattson*, October 4, 2006.
[8] GPI *Reply Comments on Reporting and Compliance Issues*, March 22, 2006.

Certain parts of the state's renewables programs, of which the RPS is the centerpiece, are based on resource neutrality (e.g. reporting and compliance), and certain parts of the programs are based on providing incentives targeted at particular technologies, resources, or facility vintages (old vs. re-powered vs. new). California Public Utilities Code Sections 383(a)(2), 383(a)(3) and 389 specifically call for targeted policies for biomass and solar thermal generators, based on a recognition of their provision of tangible desirable benefits that are above and beyond the collection of benefits common to all renewables. This is why solar thermal and biomass were given tier 1 status in the existing renewables program, and currently are the only existing renewables that continue to receive support through the existing facilities account.

Resource neutrality is not a real issue. The real issue how to effectively preserve the base of the existing biopower industries in the state, and provide for the expansion needed to maintain the twenty percent target level set in S-06-06, and endorsed by the Commission as a member of the BIWG, as the overall RPS target levels of 20 percent by 2010 and 33 percent by 2020 are reached.

5.2 What changes, if any, are needed in current reporting protocols to effectively, efficiently, and timely measure and report on these targets

The current RPS reporting protocols, which are based in part on previous contributions made by the GPI, already gather all of the information needed to monitor the LSEs' biomass and biogas procurement performance. All that will be needed will be the addition of one or two spreadsheet rows to the current template. The new rows will contain formulas; no new input data will be needed. Reporting is very much a minor issue in implementing S-06-06. As the GPI stated in our October 4, 2006, *Comments* on the proposed decision on reporting, we will be happy to cooperate with the utilities in developing a compliance reporting template, should they desire our participation.

5.3 What compliance requirements and enforcement mechanisms, if any, should apply to these biomass goals

The joint parties believe that the only realistic way that the Governor's Executive Order on biomass, and the goals set out by the Commission and the BIWG, can be accomplished is to establish a band within the RPS specifically for biopower (solid fuel biomass and biogas). Within this band, bioenergy generators would compete based on cost, thus assuring ratepayers the most cost-effective biomass and biogas energy. Given the magnitude and geographical diversity of biomass resources in California, such competition could readily be accomplished on either an LSE basis, or a statewide basis. LSE solicitations for offers of biomass energy could be by separate auction, or common RPS auction along with all other renewable generation, with targeted support provided for biomass and biogas energy producers.

> 5.4 Ways to simplify and streamline the RPS process not already addressed elsewhere that will ensure biopower generation meets RPS goals; streamlines interconnection requirements; continues net metering; assesses wheeling directly to a farm; assesses consolidation of net metering accounts on a farm; implements mechanisms to preserve existing biopower facilities; and evaluates unique benefits of biopower in meeting resource adequacy, RPS requirements and global climate change reduction targets

Question 5.4 poses six different program simplification and streamlining options that could contribute to achieving the biopower targets in S-06-06, and requests comments. The first four of the listed options are relevant mainly to small, farm based generators (e.g. lagoon manure digester systems). At this point in time, these kinds of systems contribute only a tiny fraction of the total biopower generated in the state. Nearly all of the state's existing biopower is generated by large solid-fuel biomass power plants and landfill gas generators. Small, farm-based systems certainly could grow in their importance in California in the future, but in the opinion of the GPI, it is highly unlikely that they will be able to make a quantitatively meaningful contribution to the achievement of the Executive Order's biomass targets over the course of the coming decade. The targets can only be met with significant expansion of both large, solid-fuel biomass generators, and landfill gas power generators (assuming that overall renewables grow to meet the state's RPS targets).

The CBEA, which is a trade association of the operating biomass power generators in the state, of course has a strong interest in the fifth option, implementing mechanisms to preserve existing biopower facilities in California. The GPI and CFA join the CBEA in arguing that loss of the existing infrastructure not only means that a like amount of new infrastructure would be needed just to replace the lost facilities before any net growth in biopower production can occur, but even worse, the loss of existing infrastructure would undermine the confidence of the financial community in the future of the industry, making it that much more difficult to attract the capital needed for new development.

The sixth option in question no. 5.4 is for the Commission to evaluate the unique benefits of biopower in meeting resource adequacy, RPS requirements, and global climate change reduction targets. As we stated above, the essential rationale for policy measures targeted at biomass and biogas rests on the unique and valuable ancillary services that are produced in the course of energy production from these resources. Evaluating these benefits is a necessary prerequisite to the formation and adoption of an effective biomass policy for California. Doing this evaluation should one of the priority matters to be pursued in the forthcoming biomass issues *Scoping Memo*.

Conclusion

California wholeheartedly embraced the concept of a state biomass energy policy in 2006. The Governor's Executive Order S-06-06 on biomass, supported by the state's Bioenergy Interagency Working Group's *Bioenergy Action Plan for California*, sets aggressive growth targets for bioenergy contributions to California's future. In the area of electricity production, the Commission is directed to enact policies to ensure that biomass and biogas resources continue to provide twenty percent of the total annual renewable procurement portfolios of California's LSEs, as they increase their overall renewable procurement to meet the RPS program targets of 20 percent renewables by 2010, and 33 percent by 2020.

Real resources will have to brought into play in order to achieve the goals and targets for biopower production in California that are set forth in Executive Order S-06-06. The

cost of electricity production from a new, state-of-the-art biomass generating facility is in the range of 8.0 – 9.0 ¢/kWh for large facilities (e.g. >25 MW), and more for smaller facilities, before application of any applicable credits. This compares, for example with a comparable cost of energy production for wind of 5.5 – 6.5 ¢/kWh. There is currently a federal production tax credit available to biomass power producers of 1.0 ¢/kWh, although the future availability of this credit is uncertain. That means that realistic, viable new biomass generating projects in California will probably have to submit bids in RPS solicitations in the range of 8.0 – 9.5 ¢/kWh, less whatever sources of support are available (the federal tax credit is only available for facilities that are in service by the end of 2007, unless it is extended). Biopower projects deliver power with high reliability, and thus should receive full credit towards resource adequacy requirements. Biopower generators also deliver significant decreases in the greenhouse gas emissions associated with the disposal of the resources, and with California's newly adopted greenhouse gas reduction targets, this ancillary service should becoming increasingly valued in the state. We look forward to working with the Commission and parties in formulating an effective biomass policy for California.

Dated October 13, 2006, at Berkeley, California.

Respectfully Submitted,

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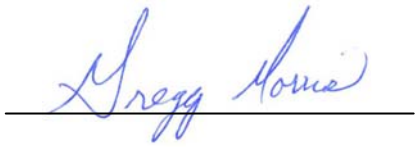
For the Green Power Institute, the California Biomass Energy Alliance, and the California Forestry Association

VERIFICATION

I, Gregory Morris, am Director of the Green Power Institute, and a Research Affiliate of the Pacific Institute for Studies in Development, Environment, and Security. I am authorized to make this Verification on its behalf, and on behalf of the Joint Parties sponsoring this Filing. I declare under penalty of perjury that the statements in the foregoing copy of *Joint Comments of the Green Power Institute, the California Biomass Energy Alliance, and the California Forestry Association on the Biomass Issues in Attachment A of the Scoping Memo and Ruling of Assigned Commissioner*, filed in R.06-05-027, are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

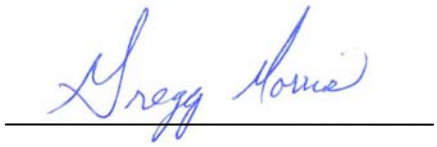
Executed on October 13, 2006, at Berkeley, California.



Gregory Morris

PROOF OF SERVICE

I hereby certify that on October 13, 2006, I have served a copy JOINT COMMENTS OF THE GREEN POWER INSTITUTE, THE CALIFORNIA BIOMASS ENERGY ALLIANCE, AND THE CALIFORNIA FORESTRY ASSOCIATION ON THE BIOMASS ISSUES IN ATTACHMENT A OF THE SCOPING MEMO AND RULING OF ASSIGNED COMMISSIONER upon all parties listed on the Service List for this proceeding, R-06-05-027. All parties have been served by email or first class mail, in accordance with Commission Rules.



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